

2 [F.]E) using at least one extended [immobilised] immobilized nucleic acid
3 strand to repeat steps D) and E), so as to provide additional extended
4 [immobilised] immobilized nucleic acid strands and, optionally,
5 [G.]G) repeating step F) one or more times.

1 3. (Twice Amended) A method according to claim 1, wherein said single-
2 stranded target nucleic acid **[is produced by providing]** comprises a given nucleic acid
3 sequence to be amplified (which sequence may be known or unknown) **[and adding thereto]**
4 to which have been added a first nucleic acid sequence and a second nucleic acid sequence;
5 wherein said first nucleic acid sequence **[hybridises]** hybridizes to one of said plurality of
6 primers and said second nucleic acid sequence is complementary to a sequence which
7 **[hybridises]** hybridizes to one of said plurality of primers.

1 4. (Twice Amended) A method according to claim 1; wherein said single-
2 stranded target nucleic acid **[is produced by providing]** comprises a given nucleic acid
3 sequence to be amplified (which sequence may be known or unknown) **[and adding thereto]**
4 to which have been added a first nucleic acid sequence and a second nucleic acid sequence;
5 wherein said first nucleic acid sequence **[hybridises]** hybridizes to one of said plurality of
6 primers and said second nucleic acid sequence is the same as the sequence of one of said
7 plurality of primers.

1 5. (Twice Amended) A method according to claim 3 wherein said first and
2 second nucleic acid sequences are provided at **[first and second]** 3' and 5' ends of said single-
3 stranded target nucleic acid.

1 6. (Previously Amended) A method according to claim 3, wherein a tag is also added to
2 the given nucleic acid sequence, said tag enabling amplification products of the given nucleic acid sequence to be
3 identified.

1 7. (Previously Amended) A method according to claim 1 wherein the plurality of primers
2 is a plurality of primers that have the same sequence.

1 8. (Previously Amended) A method according to claim 1, wherein the plurality of
2 primers comprises at least two different types of primer, one type having a different sequence from another type.

1 9. (As filed) A method according to claim 8, wherein the plurality of primers consists of
2 2ⁿ different types of primer; wherein n is an integer.

1 10. (As filed) A method according to claim 9, where n is 2.

1 11. (Twice Amended) A method according to claim 8, wherein the different
2 types of primer are present in [**substantially**] about the same concentrations as one another.

1 12. (Twice Amended) A method according to claim 1, wherein the primers
2 are [**substantially**] homogeneously dispersed over a given area.

B 12. (Twice Amended) A method according to claim 1, wherein the primers
2 are located in a predetermined arrangement (e.g. in a grid pattern).

1 14. (Twice Amended) A method according to claim 1, wherein a supply of
2 nucleotides and a nucleic acid polymerase are used to extend primers.

1 15. (Twice Amended) A method according to claim 1, wherein heating is
2 used to separate annealed nucleic acid strands.

1 16. (Previously Amended) A method according to claim 14, wherein the nucleic acid
2 polymerase is not rendered inactive by the heating conditions used to separate annealed nucleic acid strands.

1 17. (Amended) A method according to claim 16, wherein said nucleic acid
2 polymerase is *taq* polymerase, or is another polymerase that is derivable from a thermophilic
3 organism; or is a thermostable derivative thereof.

B 18. (Twice Amended) A method according to claim 1, wherein said primer
2 extension results in the incorporation of one or more detectable labels (e.g. fluorescent labels
3 or radiolabels) into extended [**immobilised**] immobilized nucleic acid strands.

1 19. (Twice Amended) A method according to claim 1, further including the
2 step of treating one or more extended [**immobilised**] immobilized nucleic acid strands so as to
3 release a nucleic acid molecule or a part thereof.

1 20. (As Filed) A method according to claim 19, wherein said treating consists of cleavage
2 with a restriction endonuclease or with a ribozyme.

1 21. (Previously Amended) A method according to claim 1, wherein one or more of said
2 primers has a restriction endonuclease recognition site or a ribozyme recognition site or has part of such a site,
3 which part becomes complete when primer extension occurs.

1 22. (Previously Amended) A method according to claim 1 that is automated to allow
2 repeated cycles of nucleic acid amplification.

1 23. (Previously Amended) A method according to claim 1, when used to amplify a
2 plurality of different nucleic acid sequences

1 24. (As Filed) A method according to claim 23, when used to amplify a plurality of
2 different nucleic acid sequences simultaneously.

1 25. (Previously Amended) A method according to claim 23, wherein said different nucleic
2 acid sequences are each provided with a first and second nucleic acid sequence as described in any of claims 3 to
3 5, said first and second nucleic acid sequences being the same for the each of the different nucleic acid sequences.

1 26. (Previously Amended) A method according to claim 23, wherein said different nucleic
2 acid sequences are each provided with a different tag so that the different sequences can be distinguished from
3 one another.

1 27. (Amended) A plurality of **[immobilised]** immobilized nucleic acids
2 producable by a method according to any preceding claim.

1 28. (Amended) A plurality of **[immobilised]** immobilized nucleic acids in
2 the form of one or more distinct areas on a surface, each area comprising a plurality of
3 identical nucleic acid strands and a plurality of identical complementary strands thereto;
4 wherein each nucleic acid strand within such an area is located so that another nucleic acid
5 strand is located on the surface within a distance of the length of that strand.

1 29. (Amended) A plurality of **[immobilised]** immobilized nucleic acids
2 according to claim 27 or claim 28, wherein there is at least one distinct area present per mm² of
3 surface on which the nucleic acids are **[immobilised]** immobilized.

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1 30. (Amended) A plurality of ~~[immobilised]~~ immobilized nucleic acids
2 according to claim 28, wherein the number of distinct areas/mm² of surface on which the
3 nucleic acids are ~~[immobilised]~~ immobilized is greater than 1, greater than 10², greater than
4 10³ or greater than 10⁴.

1 59. (Twice Amended) An apparatus for performing a method as described
2 in claim 1; comprising a plurality of ~~[immobilised]~~ immobilized primers, a nucleic acid
3 polymerase, a plurality of nucleotides and means for separating annealed nucleic acid strands.

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1 60. (As Filed) An apparatus according to claim 59, wherein the means for separating
2 annealed nucleic acid strands comprises a controlled heating means.

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1 61. (Twice Amended) An apparatus for ~~[analysing]~~ analyzing a plurality of
2 nucleic acid molecules ~~[according to claim 27]~~ producible by a method according to claim 1,
3 wherein said apparatus comprises a source of reactants and detector means for detecting one or
4 more signals produced after said reactants have been applied to said nucleic acid molecules.

1 62. (Previously Amended) An apparatus according to claim 61 wherein said detector
2 means has sufficient resolution to distinguish between the distinct areas on a surface, each area comprising a
3 plurality of identical nucleic acid strands and a plurality of identical complementary strands thereto; wherein each
4 nucleic acid strand within such an area is located so that another nucleic acid strand is located on the surface
5 within a distance of the length of that strand.

1 63. (Previously Amended) An apparatus according to claim 61 comprising a charge
2 coupled device (CCD).

1 64. (As Filed) An apparatus according to claim 63 wherein said charge coupled device
2 (CCD) is operatively connected with a magnifying device (e.g. a microscope).

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1 65. (Twice Amended) A kit for use in screening, diagnosis or in nucleic
2 acid sequencing; comprising a plurality of ~~[immobilised]~~ immobilized nucleic acid according
3 to claim 27.